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COMMENTS ON CIA ORGANIZATION FOR SCIENTIFIC AND TECHNICAL INTELLIGENCE

The following comments were prepared to describe and discuss the current organizational posture of CIA for scientific and technical activities related to intelligence and the objectives towards which we are directing our efforts. In part these comments are related to specific proposals contained in a report of a study by the President's Foreign Intelligence Advisory Board dated 5 March 1963.

Recommendation:

a. "The creation of an organization for research and development which will couple research (basic science) done outside the intelligence community, both overt and covert, with development and engineering conducted within intelligence agencies, particularly the CIA. Institutional research, academic and industrial, must be joined to mission-oriented research."

Discussion:

A most important measure recently taken to accomplish this interfacing of the U.S. storehouse of scientific knowledge and intelligence was the activation of the Scientific Advisory Board to the Director of Central Intelligence. The impressive array of senior U.S. scientists who have accepted assignments on this Board and its panels are meeting at regular intervals to review our present status and goals and to offer guidance and direction. Its Chairman, [redacted] has selected a membership to provide expert knowledge in several major disciplines of science--rosters of members of the Board and its panels on optics, covert instrumentation and life sciences are attached. The responsibilities which these men have accepted are to: 25X1A5a1

"Advise the Director on the adequacy of the Agency research and development effort and point out possible application of newly emerging scientific developments to the mission of the Central Intelligence Agency.

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Conduct a continuing review of all the research and development activities and policies of the Agency, including all research and development being undertaken through external contracts as well as internal research and development activity.

Recommend to the Director changes designed to improve the Agency research and development program and the organization of the scientific effort of the Agency, with particular emphasis on new scientific developments which might have application to the Agency mission.

Keep abreast of significant scientific and technical developments in American industry, academic circles, and other agencies of the Government, especially projects related to intelligence, and advise the Director of activities which might have application for CIA.

In addition to the benefits derived from board and panel appraisals of our approaches and activities, there is a "fall-out" of suggestions and offerings by members based on their comprehensive knowledge of the state-of-the-art across current frontier of scientific discoveries and developments. These ideas are fed into the administrative pipeline for further development either by referral to the Agency Research and Development Review Board or to the Office of Research and Development.

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Not directly coupled into our basic research and development problems, but certainly faced against them, are the [redacted] that have been entering the inputs to our National Intelligence Estimates on nuclear energy and guided missiles/astronautics for several years. These groups of officials, listed in attachment, have been most generous in their offerings of ideas, suggestions, or personnel to assist the Agency in solving problems of collection of data or assessment of the data we have on hand.

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In addition to these Board and Panel members, we have on the order of 75 highly qualified consultants at the Ph.D. or equivalent level who have engaged in studies or been assigned to ad hoc working groups for the Agency. These individuals, some on an "on-call" basis and others under regular contract, are selected from industry or academia only after a careful search for the most expert talent we could find to solve specific problems in nuclear engineering, space technology, or other fields.

With this array of professional scientific and technical talent disposed towards intelligence interests and problems, we feel confident that front line knowledge of scientific and engineering discoveries which might be applicable to either the analysis or collection of information will become readily known to the Agency.

Resources similar to the above, while useful, serve mainly as a stimulant to the efforts of our career scientists and engineers. These professionals must remain abreast of their respective fields, and, as a matter of daily practice, relate scientific developments to both the analytical and collection problems of intelligence. We are recruiting and training talent of imaginative and aggressive technical direction that will handle these facets of scientific intelligence in the same manner that political, economic, and military intelligence have been handled in the past.

Organization:

The installation of an administrative arrangement in the CIA whereby the whole spectrum of modern science and technology can be brought into contact with major programs and projects of the Agency... The close uniting of these broadened responsibilities in the top technical official of the Central Intelligence Agency, operating at the level of Deputy Director...

Execution:

The organizational changes reported on 10 September 1963 are satisfying these proposals. Figure A displays the concept of this new arrangement and Figure B represents the functional relationship of the five offices to the "closed-loop" processes designed to produce scientific and technical intelligence. Of over-all importance, of course, is the provision for research, development, collection,

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analysis, and publication of intelligence within a single unit of organization. This provides a tangible mechanism for these closely steps and for a feed-back so necessary for self-correction and healthy growth.

The Agency Research and Development Review Board has not yet assumed its ultimate role and position as the coordinator of all Agency research and development. This task will obviously require many more months of concerted effort and is paced by, and directly coupled to, the build-up in staff experience and competency of the Office of Research and Development (ORD) of the DD/S&T. For example, it would be unwise for the Board to direct a transfer of research functions from OPC or the Office of Communications to the DD/I/[illegible] until the capability exists within ORD to handle these functions as well as they are being handled now. Also, we are not yet certain of the fraction of the total research and development effort that should remain with each of the component divisions--some small portion of this should remain attached to the operational and/or user components.

Recommendation:

This technical official as he executes his responsibilities, should have reporting to him the following group, each manned by a competent technical leader:

(1) Technical Requirements Group, to generate and review the technical needs of the whole CIA operation...

Discussion:

The proposal of the TIAC refers to a "group"--we are finding that the technical requirements functions are best performed as integrated functions of our new organizational arrangement. As displayed in Figure 2, the Directorate provides a "feed-back loop" wherein the producers of finished intelligence, through their analysis of its results, are acutely aware of the gaps that exist in the information. Through professional associations both formal and informal, the means by which these gaps can or cannot be filled come under discussion. The assignment of technical personnel under this new arrangement results in a continuing review and assessment of the needs of the intelligence analyst and he can now convey, in the scientific vernacular, a clear understanding of the problems to be met. For the first

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[illegible] we are pursuing toward a system wherein the users of data can converse profitably with the designers of equipment and collection techniques. This interplay of imaginative ideas will produce the types of equipment, and techniques for its usage, that can only result in progress toward the improvement of data inputs. A recent collection success of major importance was achieved against Soviet radar in the Far East by this mechanism--it is highly unlikely that sufficient motivation for the development of the technique or equipment would have been generated if the technicians had not been directly engaged in a CIA-USAF collection effort against Soviet radars i.e., somewhat of an active electronic war with Soviet radar operators.

Implementation:

System Engineering Group, centrally to examine technical requirements as to feasibility, cost and value, in the light of evolving knowledge and discovery.

Execution:

The procedures for utilization of new ideas which become available to us are generally undergo scrutiny for technical feasibility by a small, highly qualified System Analysis Staff and, for costing purposes, by a Plans and Programs Staff. The inter-play of need, usability, feasibility, cost, and time scales are then studied at the Directorate level. The System Analysis Staff works closely with, but is distinctly apart from, the Office of Research and Development and other groups which are oriented more towards command of operations or end usage of equipment. Its most common responsibilities will lie in the area of computational analysis of proposed systems, but it will also be utilized to look inward and lend technical studies of existing remote collection systems to optimize their performance.

Implementation:

Development Group, to undertake conception of suitable, approved system plans... Field Engineering Services Group, to aid operational elements in installation, use and maintenance of new facilities...

Execution:

The development and utilization of our collection devices and systems present a unique problem in that such a large percentage of them involves the front line "state-of-the-art," and the number of units and people involved are usually small. The Office of Research and Development is staffing a program to handle the processes involved for evaluating and applying concepts through the several sets of tests and appraisals of the development cycle.

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While in agreement with the purposes of a "development group" and "field engineering services group," we believe it best that these functions in the Agency not be done by completely distinct groups of people. These items and equipments that are to be developed and field tested either in the U.S. or abroad usually represent the culmination of a complex and costly period of tailoring equipment to Soviet Bloc technical specifications and operating procedures. Our judgment is that the final field development and operational testing, often against a hostile target of opportunity, is of such importance that it deserves the continued assignment of one or more of the development engineers. Further, the circumstances under which the equipment undergoes operational tests often represents a unique opportunity for the "back-home" engineer to participate in the environment and flavor of overseas collection operations. Such experience, even though of short duration, equips our headquarters personnel to better support the collection systems once the equipment is "in-target" and functioning routinely and to improve it as necessary or feasible.

Recommendation:

"Behavioral Sciences Group, to augment already rules of psychology and medicine in intelligence planning and operations... Formation of a few special research and development groups that may be part of a natural science division, probably coordinated with the behavioral sciences group, that cross-connects various already applicable to ways of primary importance to intelligence missions...

Discussion:

Our Office of Research and Development is structured to satisfy these proposals. This Office is developing toward the objective stated for it on 10 September--to provide a spectrum of highly qualified scientists oriented solely toward the utilization of natural scientific aspects for intelligence purposes. A recent step was to activate a life sciences group within this Office. Some typical projects now under consideration are in the general fields of (1) psychological stress (its detection, etc.), (2) modification of memory functions, (3) control of human behavior, and (4) the understanding of unusual sensory devices and methods by certain animals.

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For some time there has been a need for a single clearing house within the intelligence community for all aspects of information on foreign missile firings and space ventures. On 7 December it established under the DCI/IC the Foreign Missile and Space Analysis Center (FMSAC). The principal mission of this center is to become the focal point in the intelligence community for the analysis of all matters on foreign missile and space firings. It has been directed that it utilize the best of our national capabilities, both private and governmental, and on a timely basis, explore the extensive collection activities of the services. As an analysis center, the FMSAC will work closely with all collection agencies and develop judgments on the better utilization of our intelligence resources in this field.

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